

problem again arises as in TCH/F14.4: each channel coding has a different number of bits in one basic 20-ms timing unit. Some channel codings may produce a number of bits which is compatible with current rate adaptation frames or multiples of RLP frames, other channel codings may produce a number of bits requiring new RLP versions or new rate adaptation methods, whereas some channel codings may produce a number of bits which supports the use of current rate adaptation methods only very inefficiently, that is, with significant overhead.

Furthermore, the ETSI EDGE project (Enhanced Data Rates for GSM Evolution) is developing a new modulation method offering a higher data transfer rate per timeslot than the present GMSK modulation, but maintaining the 200-khz channel spacing and the TDMA frame structure. This allows the present HSCSD data services to be supported by a smaller number of timeslots. In addition, the new modulation allows the production of new data services having as high as a 64 kbit/s data transfer rate per timeslot or over 64 kbit/s ( $n \times 64$  kbit/s) in a multiple timeslot constellation. The radio interface rate is either 28.8 kbit/s or 38.4 kbit/s. New channel codings causing the above problems are also produced with the new modulation method.

Similar problems arise also in other digital mobile communication systems and generally in telecommunication systems.

Consequently, there is a need for a general method for adapting fixed-length transmission frames to a timing unit (block) having any number of bits in a transmission channel, i.e. the same transmission frames can be sent through the system by different channel codings, avoiding the definition of new rate adaptations, link protocols and remapping procedures, and at the same time optimizing the efficiency of coding (overhead minimized).

The object of the invention is a method and system eliminating the above problems and achieving the objects.

This is achieved by the method of claim 1 and the mobile communication system of claim 12.

In the invention, an information unit is asynchronously transmitted over a transmission link, such as a radio interface, in the basic timing units of the transmission link (such as a radio interface) called radio frames herein, in the case of a radio interface. The information units are placed in two or more successive radio frames in such a way that each radio frame contains at least one whole information unit and part of an information unit which is split in two

9.11.11  
11-10-05